

The contribution of a particular ‘kids in parks’ programme to the professional development of teachers

J G Ferreira

Department Curriculum and Instructional Studies, University of South Africa, Pretoria
Ferrejg@unisa.ac.za

This article considers the possible contribution of the ‘kids in parks’ programme offered at Golden Gate Highlands National Park to the professional development of teachers. Focus group interviews were held with teachers who participated in the programme, and an interview with open-ended questions was held with a learning facilitator from the provincial education department. Although the programme has not primarily been developed to focus on professional development, the setting creates an ideal opportunity for the professional development of teachers away from the formal school situation. This research suggests that the programme, and consequently similar programmes offered at other national parks in South Africa, could make a contribution to the professional development of teachers.

Keywords: ‘kids in parks’ programme; professional development of teachers; situated professional development

Introduction

The efforts made by the South African education authorities since the 1994 elections to correct the past disparity in education have focused on change and transformation. The main aim has been to improve education for all learners by facilitating learner-centred learning and improving teaching skills to help learners to master the necessary knowledge and skills and to acquire the associated values. It has to be recognised and reiterated that teachers hold the key to change in schools (Ferreira, Ryan & Tilbury, 2007). Teaching and learning cannot improve if teachers are poorly qualified or if they lack the necessary skills to facilitate learning. Because teachers form the focal point of change in schools, success in education depends on the effectiveness of teachers and on their teaching skills and competences. Where the required knowledge and skills are inadequate, professional development has become increasingly important, especially for many teachers who received their teacher education during the apartheid era in South Africa, when the quality of training of black teachers was poor. Professional development programmes should not only enable teachers to gain an in-depth knowledge of the subjects they teach, but should also enable them to communicate basic knowledge and assist learners in developing advanced thinking and problem-solving skills (Garet, Porter, Desimone, Birmin & Kwan Suk Yoon, 2001).

Although the kids in parks (KIP) programme has not primarily been established for the professional development of teachers but to introduce previously disadvantaged learners to national parks, the programme can serve as a community-of-practice oppor-

tunity to assist teachers in improving their knowledge, teaching skills and competences and so contribute to their professional development. This article considers the efficacy of a particular KIP programme as a professional development opportunity using information provided by some of the teachers who attended the programme during 2010 and 2011, and who were willing to participate in focus group interviews. Further data was gathered by interviewing one of the natural science learning facilitators who represented the provincial education department at the programme. What follows is a brief discussion of the KIP programme as well as an overview of the formats that professional development programmes can assume.

The 'kids in parks' programme

The KIP programme, which was conceptualised in 2004 and implemented in 2005, aims at promoting access for teachers and learners to a number of the national parks in South Africa. Since its inception the programme has been offered by the South African National Parks in partnership with the Department of Education, the then Department of Environmental Affairs (now the Department of Water and Environmental Affairs) and a retail company. A memorandum of understanding was signed in 2005, initially for a period of three years, but has subsequently been extended.

According to Kids in Parks (2008:6) the objectives of the programme are the following:

- Develop a respect for and commitment to contribute towards sustaining our National Heritage through environmental education processes.
- Provide meaningful environmental learning, within the framework of the National Curriculum Statement. To equip the leaders of tomorrow with the knowledge, skills and values required to take action for the environment.
- Develop the competence and capacity through environmental education professional development workshops of participating teachers.
- Take the parks to schools and surrounding communities through field trips, thus contributing towards whole-school development and the strengthening of the relationship between communities and the parks.
- Give previously disadvantaged learners and teachers the opportunity to visit their nearest national park.

This research focused on the third objective, namely, the development of teachers' competence and capacity through professional development workshops. The following questions guided the research:

- In what ways does the KIP programme contribute to the professional development of teachers?
- What knowledge and skills do teachers acquire during the KIP programme?
- Do the acquired knowledge and skills affect their teaching practice?

As the research focused on the professional development of teachers, formats of professional development that have been pursued are considered in the next section.

Professional development of teachers

Much has been published about the professional development of teachers, both internationally (Bubb & Earley, 2007; Evans, 2002; Guskey, 2002; Rodrigues, 2004; Trorey & Cullingford, 2002) and in South Africa (Ferreira & Bopape, 2009; Jita & Ndlalane, 2009; Kriek & Grayson, 2009; Mestry, Hendricks & Bisschoff, 2009; Ono & Ferreira, 2010; Steyn, 2009). Effective professional development has been scrutinised; traditional development efforts have been reviewed; alternative formats and strategies have been suggested; models have been developed to improve the culture of teaching and learning; and the purpose and process of teacher development programmes have been addressed. As Evans (2002:124) points out: "...teacher development literature has served to disseminate information on and ideas for improving teachers', and by extension, schools', performances...yet, there remains much within this field of study that is unclear or imprecise."

Bell and Gilbert (1994) state that the process of teacher development can be seen as one in which professional and social development is occurring, and one in which development in one aspect cannot proceed unless the other aspects develop also. In most cases, therefore, professional development aims to "alter the professional practices, beliefs and understanding of school persons toward an articulated end" (Griffin, 1983:2), which is the improvement of school learning.

Besides the 'how' of professional development, various approaches to the 'where' need to be negotiated. Putnam and Borko (2000) identify various approaches to teachers' professional development. One way is to base teachers' learning experiences on their own practice by conducting activities in schools, with much of these activities taking place in the individual teacher's classroom. This form of professional development would mostly function on a one-to-one basis, which would contribute greatly to the learning and development of the teacher, but would be time-consuming and costly. At present this would not be the most effective way to address the dire need to improve the knowledge and skills of practising teachers in South Africa, not only because it would be time- and cost-intensive, but because it would be labour-intensive too.

A second approach is to offer workshops during which teachers share their classroom experiences with other teachers. Teaching materials and activities are introduced to teachers who then use these in their classrooms. Teachers share their experiences during a subsequent workshop in a forum or during group discussions. This format is similar to that of lesson study, which has been used for centuries in Japan as a means to facilitate teacher learning and development (Ono & Ferreira, 2010). Lesson study has been used with varying degrees of success in South Africa in the provinces of Mpumalanga, where it has been found to be less effective (Ono & Ferreira, 2010), and the Western Cape, where it has been deemed effective for professional development (Coe, Carl & Frick, 2010).

A third possibility is one that engages learning experiences away from the school setting to help teachers experience things in new ways. Situative theorists such as

Brown, Collins and Duguid (1989) and Lave and Wenger (1991) propose that the physical and social contexts in which an activity (such as professional development) takes place, form an integral part of the activity and is thus an integral part of the learning that takes place during the activity. By offering workshops at sites other than school buildings, teachers are afforded the luxury of exploring ideas in a fresh setting (Putnam & Borko, 2000).

The significance of the situative perspective may be underrated, but the possibility that the various settings for teachers' learning give rise to different kinds of knowing should not be ignored. How a teacher learns a particular set of knowledge and skills, and the situation in which the teacher learns these, are a fundamental part of what is learned (Putnam & Borko, 2000). However, concerns have been raised (often by teachers themselves) that professional development that occurs outside the classroom situation may tend to remove learning experiences from the day-to-day work of teaching. By implication, learning experiences created by professional development initiatives should always occur in the school context, but Putnam and Borko (2000:6) argue that the situative perspective holds that all knowledge is situated, consequently situating learning experiences for teachers outside the classroom "may be important – indeed essential – for powerful learning". Wilson and Berne (1999) also mention that school-based professional development activities may develop shared knowledge and norms that translate directly into school capacity, but point out that it may be easier for teachers to reveal what they do not know in contexts away from their home schools.

There is consensus that continuous professional development is essential to improve existing teaching skills and competences, but how and where these development efforts ought to be presented remains vague. Wilson and Berne (1999) are of the opinion that professional development has traditionally been conceptualised as a dissemination activity – new knowledge relevant to teaching is located, packaged in an attractive manner and given to teachers. Teacher learning is then 'delivered' rather than 'activated'. If it is activated, teachers participate actively in learning, enabling them to transfer and incorporate what they have learned in their classrooms. Guskey (2000) identified five critical levels for the evaluation of professional development, namely: participants' reactions; participants' learning; organisation support and change; participants' use of new knowledge or skills; and student learning outcomes. Three of these levels are applicable to this investigation and are discussed briefly.

Participants' reactions: According to Guskey (2000) participants' initial satisfaction with a professional development opportunity reflects the degree of success of that initiative, particularly if the acquired information is subsequently used to improve teaching design and delivery. It is important that participants consider their time wellspent; that the experience was useful to them; and that the physical conditions contributed to their learning.

Participants' learning: Also important is whether the participants acquired new knowledge and skills. The new knowledge and skills should help the participants function more effectively and lead to improved activities such as lesson planning, mastery

of subject content, teaching methodology and organisation abilities.

Participants' use of new knowledge or skills: Once skills and knowledge have been mastered, the effective application of these in practice is a further indicator of the success of particular professional development efforts. If the participants found the development useful, they would incorporate whatever they gained in their teaching.

These critical levels of professional development evaluation will be used to determine the efficacy of the KIP programme as a professional development opportunity.

Although it is essentially not a workshop aimed at the professional development of teachers, the KIP programme may serve as an opportunity to contribute to teacher learning and development. Teachers not only get exposure to a new setting (a national park where most of them have never been before), but also experience new learning opportunities during the workshop within a community of practice involving colleagues who teach at similar schools in relatively close proximity. In addition the programme is offered under the auspices of the provincial Department of Education and involves the learning facilitators of the district.

Purpose of the research

Accepting the postulations that teachers should be actively involved in their professional development opportunities and that the situative perspective serves as point of departure, the KIP programme offered at the Golden Gate Highlands National Park (GGHNP) and its possible contribution to professional development form the setting of this research. The question was whether the KIP programme does in fact contribute to the professional development of teachers, particularly with regard to three of Guskey's (2000) critical levels of professional development evaluation, namely teachers' reactions, their learning, and their use of new skills and knowledge. Consequently, the professional development opportunities offered through the KIP programme from the perspective of the teachers who attended the programme were identified, as were the value and use of the new skills and knowledge, as perceived by a learning facilitator (who has been involved in the programme since its inception). Ultimately, the investigation entailed a reflective action from the teachers involved in the sample and the learning facilitator.

Contextual setting

GGHNP is situated in the foothills of the Maluti Mountains of the north-eastern Free State province in South Africa. The majority of schools in close proximity to the park are rural and very remote, with learners coming from poor socio-economic circumstances. Teachers who work in these schools have limited resources and are supported by the learning facilitators of the district who regularly visit the schools. The KIP programme offered in the GGHNP is designed to complement the context of the park and aims to expose learners to "many exciting activities with a strong learning experience" (Kids in Parks, 2008:43).

Methodology

The research was focused within the interpretive paradigm and followed a qualitative research approach. This article reports on the findings of focus group interviews held with teachers and an interview with the learning facilitator. Data were collected over a three-year period. In the first year, observations were made during a workshop held for teachers before the three-day programme with the learners ('pre-workshop'), during the three-day programme with the learners and during the subsequent post-workshop session with teachers. The main purpose of the observation sessions was to determine the level of participation and commitment of teachers, as well as how they interacted with learners during the three-day programme. The researcher focused mostly on whether any of the topics covered in the pre-workshop sessions were of value to the teachers and whether the teachers appeared confident enough to implement the new skills and knowledge they had acquired. This provided background for the subsequent investigation.

During the next two years focus group interviews were held with the teachers who were willing to participate in the research. As different schools are invited annually, a new group of teachers attend the programme each year. After the post-workshop session, the teachers were invited to participate in the research and requested to provide their contact details to set up the focus group interviews. To encourage participation the teachers were assured that all the information they provided would be treated with confidentiality and total anonymity was guaranteed. Each interview started with a direct question to the entire group: What did you learn during the KIP programme that would help you in your teaching? Depending on the responses received, probing and follow-up questions were asked.

Finally, one of the learning facilitators from the provincial education department was interviewed by means of a semi-structured interview containing open-ended questions. The learning facilitator not only participates in the KIP programme, but also visits the schools in the district. Her input was required to determine whether the teachers could apply their new knowledge and skills effectively when they returned to their classrooms.

Sample

After the post-workshop sessions, the teachers were contacted individually and focus group meetings were set up. In the first round of focus group interviews, seven teachers were willing to participate and consequently only one focus group interview was held with the teachers who had attended the programme that year. More teachers (11) were willing to participate the following year and a decision had to be made about how many focus group sessions to hold. According to Lewis (1995), focus groups should consist of between six and 12 participants. Two interviews were held, the first with five teachers and the second with the remaining six. Krueger (1988) states that smaller groups of between four and six participants are preferable when the participants have a great deal to share about the topic or have experiences with the topic of discussion.

As all the teachers were from similar schools, taught the same learning area to previously disadvantaged learners and had the same exposure to the programme, they felt comfortable with one another and were willing to share their experiences and make contributions to the discussion. Consequently, in the study in question, sample selection was purposive and depended on the voluntary participation of the individuals.

Data analysis

Qualitative research, particularly focus group interviews, generates large amounts of data (Rabiee, 2004). To ensure that data analysis remains on track, the purpose of the research should be kept in mind constantly and should basically form the golden thread connecting relevant data. The data analysis of the focus group interviews started during the data collection phase when the interviews were initially facilitated, but general themes emerged from the recordings of the interviews. The contributions that reappeared in each focus group interview were identified and noted. The transcribed interviews were analysed with ATLAS.ti and the general themes that had been identified during the interviews were used to form families of data. The comparison of the words used and their emphases, frequency and intensity in the discussions formed the guideline for the discussion of the findings.

Findings and discussion

Keeping three applicable levels of evaluation of professional development as identified by Guskey (2000) in mind, the discussion of the findings is reported in two sections. The contributions from the focus groups are provided first, followed by the input from the learning facilitator. The findings are presented in the form of a narrative and on occasion include quotations from the participants. The discussion of the focus group interview findings is structured according to the themes identified during the analysis of the transcriptions.

Exposure to national parks

The initial response to the question about what they had learned during the programme was about the national parks and why these had been established. None of the participants had stayed in a national park before and a few of the teachers actually felt intimidated by the thought of visiting a park: *I felt scared to go because I don't know what to do or what to expect. Maybe I do something wrong and then I get into trouble.*

Others concurred, stating that the visit to the park had given them the confidence to visit the park again and possibly bring learners to the park if they could get sponsored transport. One respondent said: *Now I will look next time I drive through the park and take pictures to show the learners.*

The teachers wanted to know more about trans-frontier parks and about the value, history and necessity of national parks, particularly Golden Gate, which is their closest national park. They indicated that to convey the importance of national parks to their learners, it would be valuable to know more about the economic value of the parks for

the country, the role of tourism in the economy, the link between conservation and tourism, and possible future careers for learners in national parks.

Content knowledge gains

When probed about what specifically they had found useful, responses varied. Most responses were content-related. For example, the respondents mentioned that they gained insight into the need for conservation, particularly “...*conservation of all that makes our daily living possible*”. They also gained insight into conservation strategies and related topics, such as “*biodiversity, indigenous plants and animals*” and the adaptation of species to their environment. Other responses included the following:

Not only did I learn about alien plants, I also saw them and now I know why they are a problem.

We teach Grade 5 learners about alien plants but we don't know them...now I can show them alien plants near the school.

The teachers also valued the opportunity to see wild animals in their natural setting. It was not just learning about the grass and the problems with fires and erosion, but also the animals. This makes us to understand how everything fits together and that we should be custodians of natural resources.

This comment led to discussions on resource use and how to conserve energy sources, which formed part of the programme: *Not only did the learners pick up information; I also learned something like the energy saving globes and how Eskom helps with globes.*

Resource use and care formed an important discussion point. The teachers indicated that they could use this information in their communities and not only to teach their learners:

With this we can help the people to see why we must be careful with natural resources, like water. People are sometimes reckless and waste water because they don't think it is a problem, but if they understand that we must take care of nature, they will not make the mistake again.

The fact that GGHNP is a water catchment area and that people as far away as Gauteng depend on water from this area, made a big impression: *This is very important and we need to tell learners but also other people why this place is important. We must make people aware.*

Teaching resources

The teachers expressed great appreciation for the booklets and pamphlets they had received with information on the national parks, and especially the learner workbooks containing activities they could do with learners:

We do not always have books and pictures and these booklets help the learners to read and write and they can take them home and show their families. It is just sad that we do not have these for all the learners in Grade 6.

The need for teaching resources and new ideas to teach the learning area was apparent.

When prompted whether they would use the booklets and activities in future, all the responses were in the affirmative. The enthusiasm that teachers showed for the resources they received was unmistakable. It reiterated the value of the booklets and activity sheets, and showed that the structure and composition of these resources would be appropriate for future use in the classroom.

Skills gained

When asked whether they had acquired any new skills during the workshops and the programme, and what these were, responses varied. Most of the teachers indicated that they had developed their observation, identification, communication, investigation and problem-solving skills. The teachers named these skills and were asked to explain what they meant:

I definitely think I now look at things around me and see when there is litter and the place is dirty...now I know we can do something at our school too.

Yes, and we can work together and plan to raise funds to maybe to plant food gardens and help the poor people. We can take action if we work together.

We can talk to the people and explain the things that we are doing that are wrong and help change bad practice.

Other skills that had been acquired were mentioned by individuals. These were reflection skills, self-discovery, how to interact with learners outside the school, getting to know learners in an informal setting and how to manage learners in groups. Skills linked to teaching practice were also mentioned:

I learned that I can let them learn by playing a game like the game they played during the workshop...they learned from the pictures and had fun while they learned.

It is important that we change teaching methods and not always use the same, so the new way to teach the food web is very useful.

I liked the map-work activity...letting the learners find directions in this place and see how a map is made.

We know learning by doing is better, but we do not always have the ideas to do that. Now I have some new ideas. I have learned that there are other presentation methods.

General feedback

When probed on whether they thought the KIP programme had helped them in any way with their teaching and whether it had influenced the way they would teach the relevant topics in future, the responses were definite and affirmative. The only criticism raised was that more topics could have been covered during the programme and, though the physical activities learners did during the programme, such as horse riding, canoeing and abseiling, had been enjoyable for the learners, these had not contributed to the development of the teachers:

They (learners) liked the horse riding, abseiling and canoeing. Some were scared

and maybe we saw that some we did not know to be strong were strong, but maybe it is too much activity.

Yes, we could have another one which we can do, an activity that will help them in the class, but it was good.

When asked to provide specifics on what they would like to have included, some of the teachers wanted more information on the various natural resources, why these should be protected, and specific topics such as climate change, the weather, the water cycle, pollution, sources of water and water conservation. Environmental issues such as pollution, how to prevent overgrazing and veld fires, alien species and the effect of these on quality of life were also raised.

The findings of the focus group interviews suggest that the teachers gained particular knowledge and skills during the KIP programme and that they thoroughly enjoyed the opportunity to participate in the programme. The fact that at least three of Guskey's (2000) critical levels of professional development evaluation were met, namely, participants' positive reactions to the programme, their learning through the experience, and that they would be able to use the acquired knowledge and skills in their future teaching, suggests that the programme did in fact contribute to their professional development. However, as the learning facilitator regularly visits the teachers in their classrooms, the interview with her served to triangulate the data.

From the interview with the learning facilitator it was determined that she would follow up on the development activities to determine whether or not these were in fact used in the classroom. She was committed to the programme and extremely positive about it. To date, 70 schools in the district where she works have participated in the programme, with approximately 140 teachers benefitting from it. On occasion, school principals and heads of department attended the pre- and post-workshop sessions, but could not attend the actual programme with the learners as the budget did not allow more than two teachers per school to attend. In her view teachers could gain a great deal of knowledge by being introduced to the concepts such as conservation, pollution, biodiversity and animals that occur naturally in the area. The teachers were also exposed to the world of tourism. In her opinion the teachers left the programme feeling empowered and many brought their families to the area after they had completed the programme.

She mentioned that the programme offered some content that was relevant to natural science and thus assisted in the professional development of these teachers. In answer to the question whether any of the activities offered during the KIP programme were used by the teachers after they had attended the programme, she answered that specific activities on waterways, habitats, ecosystems, trophic levels and the differences between herbivores, carnivores and omnivores, with specific examples, were very useful. She requested teachers to implement at least three activities covered in the KIP programme. She pointed out that the majority of teachers incorporated the activities willingly, but that there were a few who were more apprehensive or disinterested.

The learning facilitator mentioned that the programme had been adapted over the

years and that all suggestions she had offered had been incorporated by the staff involved at GGHNP. She suggested that a slide show on the different animals in the park with descriptions of their feeding habits would be a useful improvement and indicated that it would be useful if the learners could identify trees and grasses, both indigenous and exotic, and focus on the importance of plants in the circle of life. She emphasised that it was important to link the content with the curriculum, especially for the teachers. The post-workshop sessions served as a time for reflection for the teachers and gave them an opportunity to raise issues and make recommendations. Most of the teachers just valued the opportunity to have visited the park.

Based on her feedback, it is clear that the programme succeeds in meeting Guskey's (2000) critical level of professional development related to the improvement of participant knowledge and skills, and the continued and effective use of these in the classroom after attending the programme.

Conclusion

There are various professional development strategies that can be used in the professional development of teachers, but where the development occurs (the situatedness) has not always been taken into consideration. Development actions that are implemented away from the school setting can help teachers experience things in new ways, which contributes to incidental learning. Any opportunity can therefore be used as a professional development opportunity.

The purpose of the research reported in this article was to determine whether the KIP programme offered at GGHNP contributes to the professional development of teachers and, if so, what kinds of knowledge and skills the teachers acquire. The intention was also to determine whether teachers use the acquired knowledge and skills in their teaching practice.

From the focus group interviews with the teachers, it has become apparent that the KIP programme does contribute to their professional development and that they do gain knowledge and skills that they need and can use in their teaching. The interview held with the learning facilitator (who has liaised with the staff at GGHNP since the programme's inception) confirmed this deduction.

From the data gathered from the participants and the learning facilitator, it can be concluded that the teachers who participated in the KIP at the GGHNP benefited from the programme, and that the programme contributed to their professional development even though that was not sole purpose of the programme. Their content knowledge also improved, especially in topics related to ecology, conservation and alien plants. The teachers mentioned that they planned to use the activities in future and that they had more ideas on how to teach some concepts. The fact that the activities could be used in the classroom was reiterated by the learning facilitator, who considers the programme an ideal opportunity for the professional development of teachers.

As the programme has been adapted overtime, the staff of the GGHNP value input from teachers and learning facilitators, and consequently the programme can contribute

even more in future.

Based on the preceding, the suggestion is made that the provincial departments of education in the vicinity of other national parks that offer the KIP programme should use the programme as an opportunity to assist teachers with professional development efforts. Slowly but surely, this endeavour would not only prepare the ‘kids’ as future custodians of natural resources, but also contribute to improving the quality of teaching.

Acknowledgement

I thank SANParks for the opportunity to do research on the KIP programme and the staff at GGHNP, especially Sandra Taljaard.

References

- Bell B & Gilbert J 1994. Teacher development as professional, personal, and social development. *Teaching and Teacher Education*, 10(5):483-497.
[http://dx.doi.org/10.1016/0742-051X\(94\)90002-7](http://dx.doi.org/10.1016/0742-051X(94)90002-7)
- Brown JS, Collins A & Duguid P 1989. Situated cognition and the culture of learning. *Educational Researcher*, 18(1):32-42. doi: 10.3102/0013189X018001032
- Bubb S & Earley P 2007. *Leading and managing continuing professional development: developing people, developing schools* (2nd ed). Los Angeles, CA: Paul Chapman.
- Coe K, Carl A & Frick L 2010. Lesson study in continuing professional teacher development: a South African case study. *Acta Academica*, 42(4):206-230. Available at <http://apps.ufs.ac.za/journals/dl/system/docs/19/125/1027/Coe.pdf>. Accessed 14 February 2014.
- Evans L 2002. What is teacher development? *Oxford Review of Education*, 28(1):123-137. doi: 10.1080/03054980120113670
- Ferreira JG & Bopape J 2009. Professional development of teachers in the Tswane District for effective environmental education. *South African Journal of Environmental Education*, 26:210-220.
- Ferreira JA, Ryan L & Tilbury D 2007. Mainstreaming education for sustainable development in initial teacher education in Australia: a review of existing professional development models. *Journal of Education for Teaching: International research and pedagogy*, 33(2):225-239. doi: 10.1080/02607470701259515
- Garet MS, Porter AC, Desimone L, Birmin BF & Yoon KS 2001. What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 38(4):915-945. doi: 10.3102/00028312038004915
- Griffin GA 1983. Introduction: the work of staff development. In GA Griffin (ed). *Staff development*. Chicago: University of Chicago Press.
- Guskey TR 2000. *Evaluating professional development*. Thousand Oaks, CA: Corwin Press.
- Guskey TR 2002. Professional development and teacher change. *Teachers and Teaching: Theory and Practice*, 8(3/4):381-391. doi: 10.1080/135406002100000512
- Jita LC & Ndlalane TC 2009. Teacher clusters in South Africa: opportunities and constraints for teacher development and change. *Perspectives in Education*, 27(1):56-68. Available at http://repository.up.ac.za/bitstream/handle/2263/13729/Jita_Teacher%282009%29.pdf?sequence=1. Accessed 14 February 2014.

- Kids in Parks 2008. *Kids in Parks - environmental education of our next generation.* Johannesburg: Creda.
- Kriek J & Grayson D 2009. A holistic professional development model for South African physical science teachers. *South African Journal of Education*, 29:185-203. Available at <http://www.scielo.org.za/pdf/saje/v29n2/v29n2a03.pdf>. Accessed 14 February 2014.
- Krueger RA 1988. *Focus groups: a practical guide for applied research*. London: Sage.
- Lave J & Wenger E 1991. *Situated learning: legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Lewis M 1995. Focus group interviews in qualitative research: A review of the literature. *Action Research Electronic Reader*. Available at <http://www.scribd.com/doc/38754829/Lewis-Focus-Groups-Interviewing>. Accessed 13 November 2012.
- Mestry R, Hendricks I & Bisschoff T 2009. Perceptions of teachers on the benefits of teacher development programmes in one province of South Africa. *South African Journal of Education*, 29:475-490. Available at <http://www.scielo.org.za/pdf/saje/v29n4/a04v29n4.pdf>. Accessed 17 February 2014.
- Ono Y & Ferreira J 2010. A case study of continuing teacher professional development through lesson study in South Africa. *South African Journal of Education*, 30:59-74. Available at <http://www.scielo.org.za/pdf/saje/v30n1/v30n1a05.pdf>. Accessed 17 February 2014.
- Putnam RT & Borko H 2000. What do new views of knowledge and thinking have to say about research on teacher learning? *Educational Researcher*, 29(1):4-15. Available at <http://www.jstor.org/stable/1176586>. Accessed 17 February 2014.
- Rabiee F 2004. Focus-group interview and data analysis. *Proceedings of the Nutrition Society*, 63:655-660. doi: 10.1079/PNS2004399
- Rodrigues S (ed.) 2004. *International perspectives on teacher professional development: changes influenced by politics, pedagogy and innovation*. New York: Nova Science.
- Steyn T 2009. Effective implementation of continuing professional development for South African teachers. *Acta Academica*, 41(2):256-279. Available at http://reference.sabinet.co.za/webx/access/electronic_journals/academ/academ_v41_n2_a11.pdf. Accessed 17 February 2014.
- Trorey G & Cullingford C (eds.) 2002. *Professional development and institutional needs*. Aldershot: Ashgate.
- Wilson SM & Berne J 1999. Teacher learning and the acquisition of professional knowledge: an examination of research on contemporary professional development. *Review of Research in Education*, 24:173-209. Available at <http://cemse.uchicago.edu/computerscience/OS4CS/landscapestudy/resources/Wison%20and%20Berne,%201999%20%281%29.pdf>. Accessed 17 February 2014.